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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,053	03/19/2001	Charles T. Loop	MS1-731US	1350
22801	7590	01/04/2006	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			VO, CLIFF N	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,053

Applicant(s)

LOOP, CHARLES T.

Examiner

CLIFF N. VO

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-55 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 27-41 is/are rejected.
- 7) ☒ Claim(s) 5-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/12/2003: 11/10/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action is in response to the communication filed on 11/10/2003 which has been entered into the record of file.

Information Disclosure Statement

2. The IDS paper filed 11/12/2003 has been received and placed in the record of file.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 27-41 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Gumhold et al (U.S. Patent No. 6,469,701).

As per independent claim 38, Gumhold teaches a method of compressing graphical information comprising a step of accessing a structure defining a triangle (Fig.2; col.1, lines 43-48, col.2, lines 44-47, a structure of a triangle being accessed in order to generating an initial triangle shown in Fig.2), and a step of identifying a next edge that is encountered when performing a traversal in a particular direction about one vertex of the triangle (Fig.3, col.3, lines 46-54, i.e., edge 3). Gumhold further teaches a

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system being used (see Abstract, last sentence) which executes a plurality of instructions at col.4, lines 56-59 in order to perform the steps in above.

As per dependent claim 39, Gumhold further teaches wherein the particular direction comprises a counter clockwise direction (col.2, lines 48-49).

As per dependent claim 40, Gumhold further teaches a step of generating a mesh by adding triangles adjacent to each others (Figs.3-9) starting from the initial triangle shown in Fig.2. Fig.3 shows adding further triangle by adding a new vertex and connecting two new edges 3 and 4 to edge 0 in order to form the new triangle. This inherently includes that the new vertex must have had information stored therein defines its location on the mesh and which edge that it will form a new triangle as now claimed.

As per dependent claim 41, Gumhold further teaches a step of identifying a next edge that is encountered when performing a traversal in the particular direction about a second vertex of the triangle (Fig.3, col.2, lines 44-54, i.e., *edge 4*), and a step of identifying a next edge that is encountered when performing a traversal in the particular direction about the third vertex of the triangle (Fig.2, col.2, lines 44-54, i.e., *edge 6*).

Claim 27 is similar to claim 38, Gumhold further teaches a first data field identifying a set of three vertexes for the triangle (col.1, lines 43-44), a second data field identifying a set of three edges for the triangle (col.1, lines 44-46), wherein each of the three edges corresponds to one of the three vertices (col.2, lines 51-55, i.e., one edge corresponds to two adjacent vertices which includes one of the three vertices as now claimed). Gumhold further inherently teaches a computer readable medium for storing a data structure defining a triangle described at col.4, lines 48-59.

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As per dependent claim 28, Gumhold further teaches wherein the particular direction comprises a counter clockwise direction (col.2, lines 48-49).

Due to the similarity of claims 29-30 to claim 40, they are rejected under a similar rationale.

As per claim 31, Gumhold further teaches a step of identifying which direction the edges are to be viewed in (col.1, line 63 through col.2, line 6, i.e., "connect forward" or "connect backward").

Claim 32 is similar to claim 27, Gumhold further teaches creating a triangle based on the data structures defining a list of three vertexes and a list of three edges, i.e., a pair of triples (col.1, lines 43-46).

As per dependent claim 33, Gumhold further teaches wherein the particular direction comprises a counter clockwise direction (col.2, lines 48-49).

Due to the similarity of claims 34-36 to claims 29-31, respectively, they are rejected under a similar rationale.

As per claim 37, Gumhold further inherently teaches a computer program that is executed by a processor to perform a method recited in claim 32 (col.4, lines 56-57).

Claim 1 is similar to claim 38, Gumhold further teaches a C application which would have inherently included a plurality of algorithms, i.e., "modules", each has one or more procedures and when executed, manipulates various aspects of one or more of the plurality of triangle definition structures as shown in Figs. 3-9, col.4, line 47 through col.5, line 16 as now claimed.

As per dependent claim 2, Gumhold further teaches wherein the particular direction comprises a counter clockwise direction (col.2, lines 48-49).

As per dependent claim 3, Gumhold further teaches adding a new triangle definition structure to the plurality of triangle definition structures (col.2, lines 44-64).

As per dependent claim 4, Gumhold further teaches the features as now claimed at col.6, lines 26-38, i.e., a set of three vertexes such as "v[0]", "v[1], and "third vertex".

Allowable Subject Matter

5. Claims 42-55 are allowed.
6. Claims 5-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: none of the cited prior art shows an arrangement of the steps receiving, checking, creating and connecting in order to form a method for adding a triangle mesh as now claimed in claims 42-46; updating a representative edge of each vertex of the triangle so that the representative edge is not an edge of the triangle; and for each edge of the triangle, removing the edge and changing the connectivity of other triangles in the triangular mesh so that any other triangle having an identification of a next edge which is an edge of the triangle being removed has the identification changed to another edge of the triangular mesh as now claimed in claims 47-50 ; and an arrangement of the make edge operator, slice operator and swap operator in order to form a computer

readable media having stored a plurality of instructions to manage a triangular mesh as now claimed in claims 51-55.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLIFF N. VO whose telephone number is 571-272-7651. The examiner can normally be reached on 2nd Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MATTHEW C. BELLA
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